



2022 SPRING ECONOMIC FORECAST

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ANALYSIS AND FORECASTING

AS THE WORLD TURNS

Balancing Growth and Inflation in an Unbalanced World

THE NATION, SOUTHERN CALIFORNIA AND ORANGE COUNTY

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AS THE WORLD TURNS

“I am a man of constant sorrow”

— *O Brother, Where Art Thou*

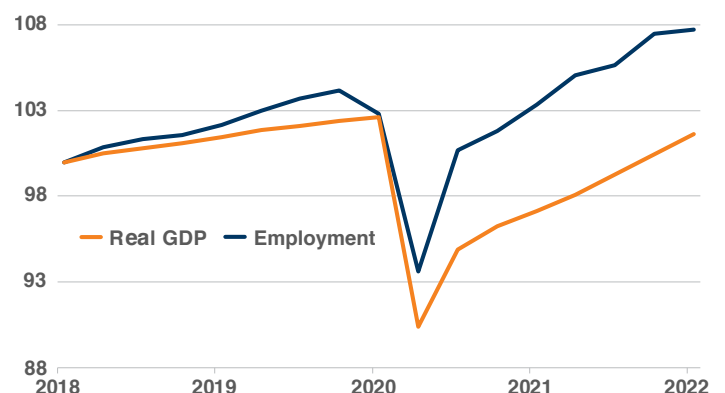
Overview

“Man of constant sorrow” is the epic song of the semi-religious, semi-satirical, semi-mythical, semi-historical and absolutely brilliant comedy “O Brother, Where Art Thou.” The movie itself straddles a peculiar space between the Homeric saga that founded Western Civilization (upon which it is loosely based) and a hearty dose of old-fashioned Americana laced with oodles of humor, pathos, fantasy and an unparalleled bluegrass soundtrack. It tracks the journey of Ulysses Everett McGill — a charming, garrulous, silver-tongued petty criminal — and his two dimwitted but lovable companions as they escape prison and traverse cotton fields and dusty towns of Depression-era Mississippi in search of a treasure (which does not exist). Much like the real Odyssey, “they must travel a long and difficult road, a road fraught with peril” (as the blind bard prophesizes) replete with scantily clad sirens, soul-saving river baptisms, harrowing clan rallies, soul-selling rendezvous with the devil, fearsome Bible salesman cyclops, and a Biblical flood of world-ending proportions. Our “heroes” manage to survive all this, and though there is no treasure to be had, the journey is undoubtedly a devilishly entertaining one of redemption, second chances, and yes ... salvation.

Much like the movie’s hapless trio, the U.S. economy has embarked on an epic journey of Odyssean proportions over

the past two years “fraught with perils ... and startlements.” It endured untold pains and post-apocalyptic scenes when a once-in-a-century pandemic unleashed draconian lockdowns that shuttered schools, closed businesses and darkened cities. In the U.S. alone, real GDP fell by an unprecedented 10.1% while employment rolls shed 22 million jobs — a full 15% of the total workforce. But while the collapse was unparalleled, the recovery has been equally spectacular: Real GDP has recovered all lost ground and then some, rising 3% above its pre-pandemic level. It stands only a hair (1.2%) below trend — where the economy would have been had the pandemic never happened. The labor market has also healed, albeit at a more subdued pace, recouping most losses but still remaining 1.6 million jobs short compared to the golden days of pre-pandemic (Figure 1).

FIGURE 1
A Strong Recovery: Real GDP Has Recovered;
Employment on Its Way
(Index, Jan 2018=100)



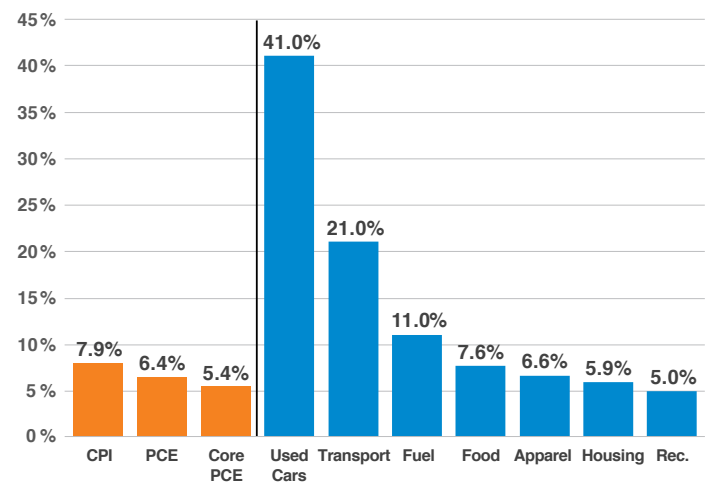
Along the way, this at-times terrifying and at-times glorious journey has shouldered far more than its fair share of challenges and strokes of good luck, though the former have, alas, far outweighed the latter. Vaccines certainly fall within the “strokes of good luck” category. Much like Delmar’s proclamation in “O Brother” that baptism “washed away all his sins and transgressions ... so neither God nor man’s got nothing on him,” the same way vaccines were to deliver us from the pandemic abyss to “God’s golden shore” — the promised land of normalcy and a return to business as usual. Vaccines have delivered, though perhaps not as decisively and permanently as most of us had hoped given their waning protection and inability to effectively arrest the spread of the disease. Gigantic government support has been another bright spot, at least in the midst of the pandemic, but its outsized and arguably counterproductive effect as time went on has sown formidable seeds of instability as the recovery began to take hold. It has been an enchanting but quite a dangerous siren song, so to speak.

This is as far as the good news goes. The other side of the ledger — the one accounting for the harrowing “obstacles” — is dauntingly long. Three successive virus waves have crashed on these shores since the initial one in spring 2020. The damage to the economy has varied, though the trend has tended towards less destruction even as the virus has become more infectious (and less deadly). The Alpha variant, which swept the country in winter 2020/2021, peaked at 230,000 daily infections and 3,300 daily deaths, while Delta, which spread in summer 2021, peaked at 163,000 daily cases and 2,000 deaths. Both appear puny compared to the tidal wave of Omicron with over 800,000 daily infections. Despite its virulence, Omicron proved to be far less fatal with daily deaths peaking at around 2,300, which explains why economic activity fell far less at the end of 2021/early 2022 compared to previous surges.

Other pathologies abound. Inflation — long assumed dead under the auspices of a supposedly vigilant Fed and a benign macro environment — has come roaring back. At a current 8.5%, the annualized pace of CPI inflation is at its highest since 1982 — the year when Michael Jackson’s “Thriller” thrilled the world and “Fast Times at Ridgemont High” taught us the breezy optimism of Spicolian live-and-let-live philosophy. And, as we have warned repeatedly in our previous reports, inflation is not just contained to a few items or a handful of sectors. It is pervasive, persistent and widespread. Nearly three-quarters of items in the CPI basket are up more than 3% year-over-year (Figure 2). The tamer core personal consumption expenditures (PCE) — a Fed favorite,

which strips away pesky volatile items such as energy and food prices — is up 5.4%. The producer price index (PPI) for finished goods is running at an eye-watering 15.2%, while the PPI for intermediate goods — an early predictor of inflationary pressures — is up 21.8%, a hair below last fall figures, but the highest it has been since the oil shock of 1973.

FIGURE 2
Inflation... Inflation... Everywhere
(y-o-y percent change)

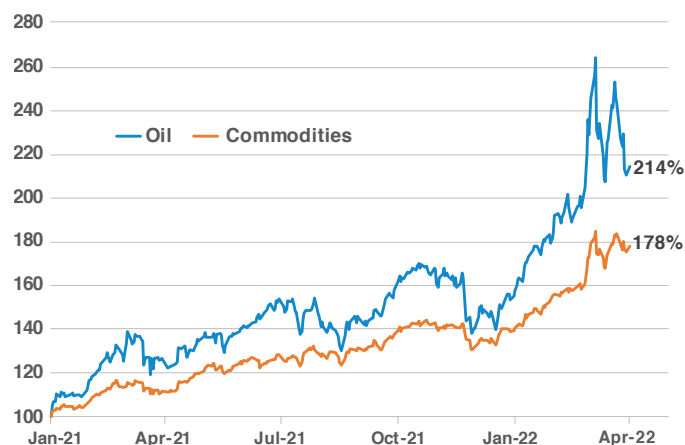


More worrying is the fact that unsettling high inflation is spawned both by unprecedented demand and by extraordinary supply constraints. Fueled by pandemic-induced pent-up demand and piles of government cash, real final domestic demand grew by nearly 7% last year, the highest since the early 1950s. Real retail sales soared by an eye-popping 14%, the highest since data collection began (in the early 1990s). It’s not just consumers: Business capital expenditures (CAPEX orders) grew by 15% last year, while shipments are up 13%.

This run-up in demand has smashed against unprecedented supply logjams. Clogged ports, rejigged supply chains, and shortages of everything from microchips to transcontinental container ships have stoked inflation while simultaneously sapping growth. Chip shortages knocked off 10 million, or 10%, of world car production in 2021, pushing used car prices up by a dizzying 40%. Widespread labor shortages are adding to these woes. There are 2.6 million fewer people in the labor force today than before the pandemic, even though wages are rising at the fastest pace in four decades.

Formidable as these challenges are, they pale in comparison with what 2022 has had in store so far. A war in the heart of Europe as Russian tanks roll into Ukraine has sparked harrowing scenes of death and destruction and bone-chilling fears of a wider conflict with hints of nuclear escalation. Human costs aside, the war has delivered an unquestionable stagflationary shock to the world economy: Though the economic heft of both Russia and Ukraine is puny (less than 2% of world GDP), they command an outsized presence in global commodity exports. Russia ranks number one, two and three, respectively, among the world's exporters of natural gas, oil and coal. Russia produces 10% of world oil supplies and exports around 7.5 million barrels per day (5 million of crude and 2.5 million of oil-product exports). Oil prices have surged by 14% since the invasion, while food prices are up by 21%, on top of already elevated levels seen last year as the global economy reopened (Figure 3).

FIGURE 3
Up and Away: Oil and Commodity Prices Through the Roof
(Brent Oil, Thomson Reuters Commodity Index, Jan 2021=100)



The dawn of this year has also ushered in a quasi-religious transformation of the Federal Reserve from perennial growth-hawks to “born-again” inflation fighters. Gone are the days of “transitory” inflation: Mr. Powell has finally come around to the view that inflationary pressures will not magically disappear anytime soon and certainly not on their own. The Fed has promised seven rate hikes this year and two in the next, even as it brushes off steep trade-offs between growth and inflation. Its own projections show continued growth this year (2.8%) and the next (2.2%) (albeit at a slower clip than previous forecasts) with inflation falling to a benign 2.7% by 2023. We hope they are right. But history and conventional

wisdom dictate that administering contractionary shocks to an economy that was set to disappoint in the first place may end up delivering darker outcomes than what most of us wish for.

There is no question that the path of this expansion has become much narrower now compared to a year ago, perched precariously on a cliff with stagflation-like abyss on one side and a recession-depth gulf in the other. Our Homeric journey has come to the proverbial patch between Scylla and Charybdis, the mythical sea-monsters that beset the narrow waters of the legend. Navigating these waters is a daunting task as the voyage ahead will be a lot more uncertain and significantly more trying. It may well turn out to be a journey “of constant sorrows.”

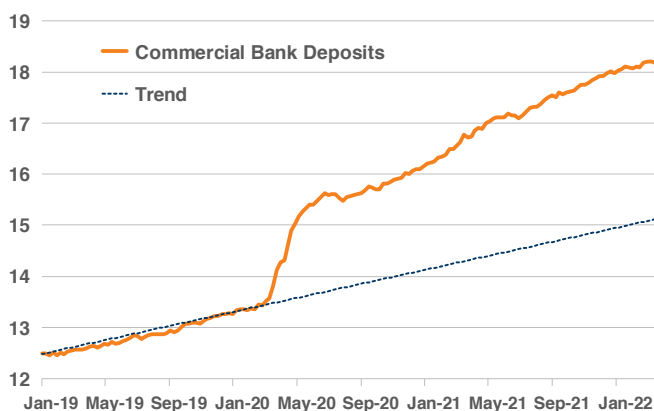
Not surprisingly, our outlook for the economy is a bit more nuanced than what is commonly the case in this stage of the business cycle. In the short term, over the next 10–12 months, we expect continued growth, albeit a decelerating one, coupled with high inflation: an expansion with stagflation dynamics, so to speak. Our near-term projections are generally a bit more dour than the consensus (and the Fed) — fractionally lower in terms of growth but considerably higher in terms of inflation. As unappealing as this sounds, some growth — even stall speed growth with stagflationary dynamics — is orders of magnitude better than the alternatives: a full-blown stagflation or an outright recession.

Our longer-term view, however, is decidedly more grim. The confluence of an escalating war, rapid rate hikes, unprecedented labor shortages, persistent supply disruptions, higher energy costs, a multi-decade spike in inflation and continued flare-ups in a once-in-a-century pandemic are bound to dim even the most Pollyannaish outlook. Engineering an “immaculate soft-landing” — wringing out inflation without dislodging growth — under these conditions is a herculean task, and though we bid the Fed all the good luck it needs to orchestrate such a feat, we remain unusually concerned about its ability to do so. As we lay out in detail below, odds are more than even that a recession is lurking beyond the immediate setting. If it's any solace, it is likely to be much milder compared to the last two.

First, the good news: Growth will continue in the near term. Despite the gathering storms, the U.S. economy is currently enjoying a blissful expansion stretch akin to the paradise of the “Big Rock Candy Mountains,” one of the catchiest tunes in “O Brother,” where “the handouts grow on bushes,” “hens lay soft-boiled eggs,” and “there's a lake of stew and of whisky too” where “you can paddle all around it in a big canoe.” Indeed, many rounds of government

support during the pandemic have considerably fattened household bank deposits, which have soared from around \$13.5 trillion in early 2020 to around \$18 trillion today (Figure 4). Consumer savings is up \$2.6 trillion; household wealth currently stands at \$143 trillion, a jaw-dropping \$30 trillion higher than pre-pandemic. There are oceans of cash sloshing around in the system — enough to paddle around in canoes — that should cushion any short-term blows to the system.

FIGURE 4
Swimming in Cash: Commercial Bank Deposits
Up \$3 Trillion from Trend
(trillions of dollars)



The labor market also appears to have a bit more room to run: There are nearly two jobs available for any currently unemployed person, a first in history. The economy added a staggering 6.7 million jobs last year and nearly 1.7 million in the first quarter of 2022, suggesting strong momentum. Household balance sheets are in pristine shape. Household debt as percent of GDP is at a two-decade low, after rising dramatically in the run-up to the Great Recession. Ditto for the banking sector, which also deleveraged rapidly in the aftermath of the financial crisis with debt levels falling from 120% of GDP to a current 75%. Bank tier one capital as percent of financial assets — a measure of the financial soundness of the banking sector — is at 15.6%, its highest in over a decade. More importantly, financial conditions continue to remain loose even as the Fed commences tightening — in part because rates are moving from overly accommodative to slightly less so (in the first few months) and later on to neutral, rather than to outright restrictive territory. Economic damage is generally limited early on when rates begin to rise but are still at relatively low levels.

Nonetheless, the future path of this expansion will likely be plagued by persistent stagflationary dynamics. Higher interest rates will take the oomph off the red-hot housing market, consumer demand and business investments,

cooling off growth and general economic activity. Scarce resources, from labor to supplies to energy, will dampen growth while simultaneously fueling inflation. Labor shortages are expected to persist well into the second half of the year, especially for lower-wage workers. But even as the pandemic ebbs, the pool of potential workers may have shrunk permanently as an excess of 2.5 million workers have opted to retire earlier than usual, reducing the economy's potential output and putting upward pressure on wages.

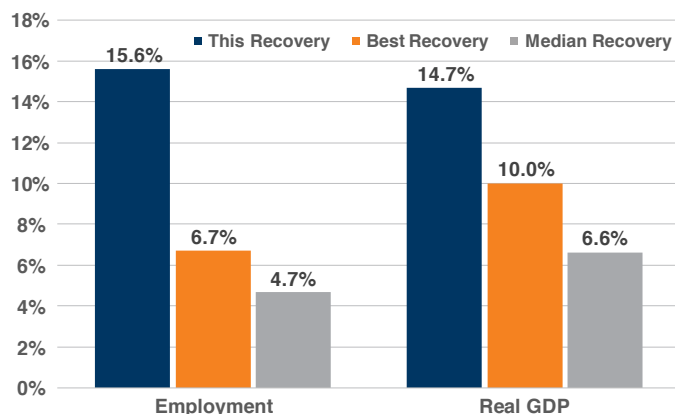
Instead of resolving, as appeared to be the case early in the year, supply chain snags are getting worse. Container shipping rates are creeping back up to the stratospheric levels of last summer. The armada of ships waiting at the ports of Los Angeles and Long Beach has abated to 30–40 vessels, down from 80 in mid-October, but only because of logistical changes that require ships wait in line further out at sea. The real queue is north of 90 ships. China's zero-COVID policy has scrambled supply lines yet again. As of mid-April, 40 million people were under some form of lockdown due to a recent virus breakout in the country. By the end of March, Shanghai — with 24 million inhabitants — was added to the unlucky list, forcing countless businesses (including Tesla, FoxConn and Toyota) to shut operations. More concerning, the Russia/Ukraine war is not only a supply shock layered on top of these existing supply shocks, but because of its energy-centered nature, it is one that will ramp up inflation while crimping growth.

Things look bleaker in the longer term, beyond the next year or so, with recession risks running uncomfortably high. Though the national mood has decidedly soured on drastic COVID restrictions, even moderate disruptions related to future virus flare-ups will add strains to an economy that is already being pummeled by energy price shocks and a deliberate cooling by the Fed. History offers some important lessons on the factors that bring about the demise of an expansion. Going back to the early 1950s, they fall in either one of the four categories: external shocks (oil price shocks of 1973 and 1980 and the pandemic of 2020); fiscal tightening (1953 as the Korean War wound down); overheating, which leads to an overtightening by the Fed (1957, 1960, 1969, 1973, 1980 and 1981); or financial imbalances (1990, 2001 and 2007). As we discuss in more detail below, with perhaps the exception of the last factor (imbalances), all the other three seem to be largely present in some form or another in the current environment.

More concerning is the fact that, though a fledgling — barely two years old — this recovery is aging uncomfortably quickly. It is likely destined to run hotter and shorter than the last three recoveries, not in the least because a pandemic-induced

recession is not a garden-variety recession and should not be treated as such. There was nothing fundamentally wrong with the U.S. economy when COVID hit. Nonetheless, the policy response was in the same order of magnitude as if the economy had plumbed the depths of the Great Depression. A jaw-dropping \$10 trillion in support (\$6 trillion in fiscal and \$4 trillion in monetary policy) was pumped through the economy in the span of one year, nearly half of U.S. GDP. The recovery that ensued was unprecedented. Real GDP is now 14% higher compared to the dark days of the pandemic, a feat accomplished in six short quarters (Figure 5). The average time across recoveries for such growth is a full four years. Even the fastest recovery (at the end of WWII) took 10 quarters to reach the same level. Much like Icarus, who flew too close to the sun and had his waxed wings melted, so too may this recovery have flown too high too soon.

FIGURE 5
A Quick Recovery:
This Expansion Has Bested All That Came Before
(cumulative growth since trough)



It is possible that none of these worst-case scenarios materializes: The Fed is able to thread that perfect balance by cooling off inflation without smothering the recovery; the virus is permanently stomped out; peace triumphs, and supply-chains return to the neatly choreographed balance that prevailed prior to the pandemic. We can then continue our Homeric journey, gliding in a horizon with no storms or clouds towards that blissful place known as “Big Rock Candy Mountains.” In the immortal words of the song: “I’m bound to go; Where there ain’t no snow; Where the rain don’t fall; The winds don’t blow; In the Big Rock Candy Mountains.” Wouldn’t that be wonderful?

The Winds of War

*“Oh, bear me away on your snow-white wings,
To my immortal home”*

- Angel Band, “O Brother, Where Art Thou”

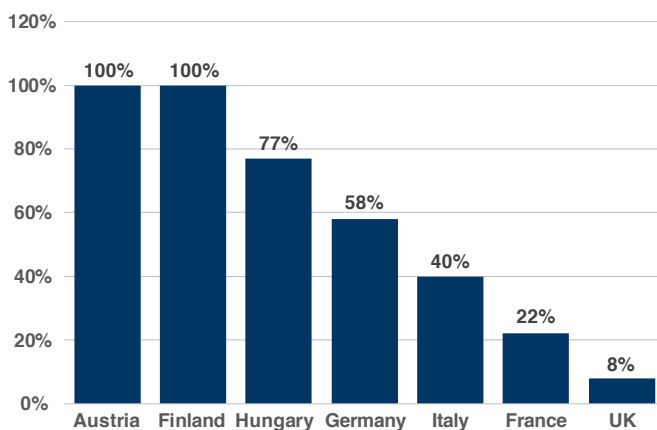
America’s task after the end of WWII was “just a bit less formidable than that described in the first chapter of Genesis,” wrote Dean Acheson, Truman’s Secretary of State. “That was to create a world out of chaos; ours, to create half a world, a free half, out of the same material without blowing the whole to pieces in the process.” This decades-long geopolitical order, which endured throughout the Cold War, entered a new phase of broader cooperation and globalization with the collapse of the Soviet Union in 1991, ushering in a new world, which, though not exactly “whole,” was also not so visibly split in two “halves.” All this came to an abrupt halt on Feb. 24, 2022, as Russian forces amassed a full-scale invasion of Ukraine. Amidst the carnage, a different world order is emerging — a more fragmented and less-globalized one that marks a more permanent rupture not only between the West (and its allies) and Russia, but between the West and the rest of the world.

So far, the war has dragged on for nearly two months. Though trying to divine the fortunes of wars is generally a hopeless endeavor, it is becoming painfully obvious that, though unlikely to spread beyond Ukraine/Russia border, this war is not about to end soon. The Ukrainians are determined to fight on, fighting on the “beaches, [...] landing grounds, [...] in the fields and in the streets,” having received ample military help from the West. The Russian army, having run up against unexpected and fierce resistance, has stalled and regrouped, but a full-scale withdrawal seems unlikely at this stage. Though it seems Russia’s maximalist aims in Ukraine may be thwarted to a certain extent, it is unlikely that Russia will be willing to slink back without some territorial concessions especially on the eastern and southern part of Ukraine. Peace talks have not gone far, in large part, because the two countries stand a gulf apart on these issues, even though Ukraine has hinted that it will no longer pursue NATO membership, a major Russian grievance. Neither has there been an earnest push for peace from the West: After dispatching hefty humanitarian and military aid to Ukraine and bone-crushing sanctions to Russia’s economy, it has made little effort to try to bring about a diplomatic solution to the crisis.

How long the war lingers matters greatly for global economic outlook. At \$1.6 trillion, Russia’s economy is the world’s 11th largest, smaller than that of the top three U.S. states (California, Texas and New York). Ukraine’s economy — at \$155 billion — is

on par with Nebraska's. But what they lack in terms of sheer size, they more than make up with their disproportionate impact in world commodity exports. Russia alone accounts for 10% of world oil production and 17% of gas production. Its impact on European markets is much larger: Russia accounts for 26% of Europe's oil imports and 42% of its gas imports. For some countries, the vulnerability is even more acute: Germany imports nearly 60% of its natural gas from Russia, which accounts for 27% of its total energy consumption (Figure 6). Russian gas makes up 40% of Italian gas imports, accounting for nearly one-third of its energy consumption. By comparison, U.S. exposure is miniscule: only 4% of oil consumption and no gas imports. This explains American willingness to outright ban Russia's oil imports and the European reluctance to follow suit so far.

FIGURE 6
A Tough Predicament: European Gas Imports from Russia
(percent of total consumption)



But even America is not spared the pain. Oil trades in global commodity markets and as issues of scarcity arise — due to supply disruptions, outright sanctions or self-sanctions — global oil markets are ablaze. Brent crude prices soared to nearly \$140 in early March — double the price of mid-December — and though it has come down from these levels, it remains elevated at a current \$110. A \$10 increase in oil translates to roughly \$0.30 cent higher price per gallon at the pump for U.S. consumers. The average gas price in the U.S. peaked at \$4.32 per gallon in early March. Though it has eased a bit, it still stands at a staggering \$4.08 — close to the highest in history in nominal terms. The average gas price in California is a staggering \$5.75. Should prices remain at these levels for the remainder of the year, fueling tanks alone would cost the average household \$2,400 more this year compared to last, or roughly \$100 billion in aggregate, sapping 0.3% of GDP growth this year and adding around 0.8 percentage points to inflation.

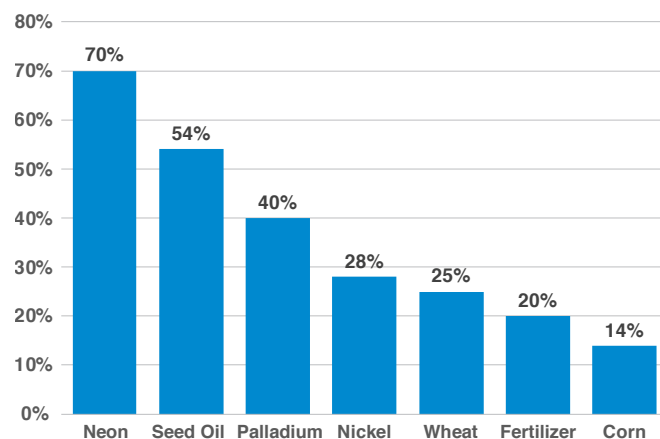
Things may not get better anytime soon. Sanctions — official and self-imposed ones — and disruptions of oil production in Russia may already have taken off around 2 million barrels per day (bpd) from global markets. No other supplier, or any combination of them, can ramp up production fast enough to backfill this shortage. The U.S. has the capacity to expand oil and LNG production, but administrative obstacles, a push towards de-carbonization, years of under-investment and investor pressure to maintain capital discipline after the global oil rut in 2015 are hampering those efforts. OPEC's spare capacity is around 2 million bpd, but it has struggled to meet its own production quotas due to pandemic-related disruptions. Some estimates show that the global market was already undersupplied by 1 million bpd even before the war in Ukraine. Iran and Venezuela may chip in with around half a million of bpd each, but even assuming that the delicate negotiations with these countries succeed, it would take nearly six to eight months for their production to hit the global markets.

Darker scenarios abound. Should the war escalate and the savagery deepen, it is possible that the West may cross the proverbial Rubicon and ban Russian energy products altogether. That would amount to a massive stagflationary shock that would pummel the world economy. It's not just the energy shock. Commodity markets are reeling as well. Russia is the biggest global producer of palladium, accounting for 40% of the world's production, and 16% of world's platinum. Both are used to produce catalytic converters for the auto industry, which is already gripped by an historic shortage of raw materials. Russia and Ukraine combine for 70% of the world's exports of neon, a critical ingredient in the production of semiconductor chips. Neon gas prices are up 900% compared to mid-February, before the war. This will undoubtedly worsen the global chip shortage problems, which have plagued manufacturers for over a year. Russia also accounts for 28% of world exports of nickel used in lithium batteries essential for electric vehicles. Prices of nickel shot up from around \$30,000 per metric ton to over \$100,000 in mid-March, prompting the 145-year old London Metals Exchange to halt trading. Prices have come down to earth since then, but as long as the conflict continues, be prepared for commodity markets to heave and roil, inflicting further pain.

Food supply disruptions are another concern. Russia and Ukraine combine for 54% of the world's shipment of seed oil, 30% of barely and 25% of wheat production. Ukraine is the world's fourth largest corn exporter, accounting for roughly 14% of global shipments. Russia and Belarus (another heavily sanctioned country) produce nearly 20% of fertilizer chemicals, a vital ingredient for crops.

The war is adding on to global food supply woes: Global stocks were 31% below the five-year average even before the conflict began due to several poor harvests, frenzied buying during the pandemic and supply-chain disruptions over the past year (Figure 7). Fertilizer prices have nearly tripled; wheat prices were up a jaw-dropping 50% in mid-February and have risen an additional 30% since the invasion. An index of global food prices developed by the Food and Agriculture Organization had reached an all-time high in February (the latest available data), even before the war started, with the number of people deemed food-insecure at 800 million — the highest in a decade. Prices are bound to have leapt much higher in March, ensnaring more people into poverty. And the share of income spent on food is bound to eat up a larger portion of disposable income, especially in emerging markets. It is projected to rise to 33% from 20% (in 2018) in Sub-Saharan Africa and from 11% to nearly 20% in Latin America and the Middle East. The picture is not as dire for developed nations, but even here, food expenditures will likely account for nearly 10% of disposable income, up from 5.5% in 2018.

FIGURE 7
Russia and Ukraine Produce and Export Virtually Everything
(share of world production)



Other trade and financial links between Russia and the West are less menacing. Russia is the U.S.'s 30th largest trading partner, with a total trade of roughly \$30 billion, a rounding error of the U.S.'s \$5.9 trillion overall two-way trade flow. Total bilateral trade with Europe is larger — around \$288 billion — with Russia being the fifth largest trading partner of the EU. The exposure of the banking sector to Russian banks is also miniscule: \$15 billion in the U.S. and \$88 billion in the EU.

Nonetheless, risks exist. The U.S. banking exposure to European markets is enormous: over \$2 trillion. Should the European economy slump into a recession due to potential energy disruptions, shockwaves will be felt across the Atlantic. Recent developments have taken a turn for the worse on this front: Russia has threatened to turn off gas supplies should “unfriendly” nations refuse to pay for gas in rubles instead of euros, which it can’t readily use due to sanctions. This would plunge the European economy, and Germany in particular, into a deep recession.

Understandably unwilling to confront a nuclear adversary on the battlefield, Western allies have instead wielded crippling economic sanctions on Russia. It is now the most heavily sanctioned country in the world, outranking North Korea and Iran. The most headline-grabbing was the expulsion of most Russian banks from SWIFT — an international payment system facilitating financial transactions. But perhaps the most surprising and the most severe is the freezing of more than half of Russia’s \$630 billion foreign exchange reserves, an unprecedented step that sent alarming signals to other regimes across the world. Russian airlines have been banned from airspaces across the West, Russian companies have been expelled from U.S. credit markets, and Russian vessels cannot enter British waters. Export controls will deny Russia access to high-tech gadgets used in military and advanced technology sectors ranging from microchips to cutting-edge machinery. A growing number of companies have fled the country — from McDonald’s to Nike, Apple, Visa and Mastercard — though perhaps the most significant is the exit of BP, Shell and Equinor from their Russian oil ventures.

All this is meant to deal a deadly blow to Russia, leading to an instant immiseration of its economy. In reality, while serious, the shock is likely not fatal. To start with, the EU has declined to sanction Russia’s energy exports, given its vital dependence on them. The UK has promised to phase out its Russian oil imports by the end of the year; Europe has pledged to reduce its dependence on Russian gas by two-thirds over the same time span. While the path for the UK may be a bit easier as it only imports 8% of oil from Russia, it is hard to muster much optimism about the ability of the EU to ween itself rapidly from Russian energy. Moreover, Russian oil continues to flow to the rest of the non-Western world, which has, as of now, shied away from embracing the full-scale sanctions onslaught unleashed by the West.

Russia has weathered the current crisis relatively well so far. It managed to stave off a free fall of its currency: The ruble lost 40% of its value in the aftermath of sanctions, but it has

recovered most of it, and it currently stands around 5% below its pre-war value (Figure 8). A run in the Russian banks resulting in the withdrawal of a dizzying \$31 billion has been stemmed, and customers have returned much of their cash back into their accounts. The stock market initially collapsed by half, but it has recovered a chunk since. Some of the tools used to dull the pain of the sanctions have been conventional: The Central Bank of Russia (CBR) raised interest rates from 9.5% to 20% to stem the ruble's collapse. But some are unconventional, such as the ban on short-sales, the requirement that exporters convert 80% of their proceeds in rubles and the insistence that energy exports be paid in currencies other than dollars or euros. There is talk of a ruble-rupee oil trade with India.

FIGURE 8
From "Rubble" Back to Ruble:
The Ruble Has Recovered Despite Sanctions
(rubles per USD)



More broadly, Russia has spent a good portion of the last decade, since its annexation of Crimea in 2014, seeking to shield its economy from precisely these sorts of sanctions. It shored up its external and fiscal balances, and its current account surplus has risen to 9% of GDP, leaving substantial buffers of excess savings. Its public, corporate and financial sectors are now net external creditors. Its share of international financing from the Bank of International Settlements (BIS) has declined by three-quarters, and the share of Russian Eurobonds has essentially halved since 2014. It has substantially reduced its reliance on the U.S. dollar: Its oil fund no longer holds dollar-denominated assets, and the CBR has dramatically decreased the share of its dollar reserves from around 40% to a current 16%.

The worry is that this decoupling may lead to a broader and more permanent rupture of the post-Cold War world, reviving ghosts of past times of a “world of two halves.” The rapprochement between China and Russia is a prime example. The trade between the two countries is already

insulated from Western sanctions with only 33% of payments taking place in dollars, down from 97% in 2014. While far from dethroning the dollar as the world's reserve currency — only 3% of international payments are in yuan compared to 40% in dollars — it may accelerate a push to develop alternative financial and technological infrastructures. China has developed a parallel system to SWIFT (called CIPS) in yuan and is working towards developing a digital currency. None of this augurs well for globalization, which, in the span of a decade and a half, has endured a crippling financial crisis, trade wars, a virulent global pandemic and now a full-blown war.

Thirty-two years ago, soon after the collapse of the Berlin Wall and on the eve of the disintegration of the Soviet Union, the world was swept away by “Wind of Change,” a hit song of the German rock band Scorpions. It became a symbol of a more open, more liberal and more unified world, one where we “let your balalaika sing what my guitar wants to say.” Alas, the winds of change have turned more ominous as of late, throttling the balalaika and stifling the guitar. Let's hope it won't last for long.

Keep on the Sunny Side of Life: Continued Expansion with Stagflation Dynamics

*“... Oh, the storm and its fury broke today,
Crushing hopes that we cherish so dear.
Clouds and storms will in time pass away.
The sun again will shine bright and clear.”*
- “O Brother, Where Art Thou”

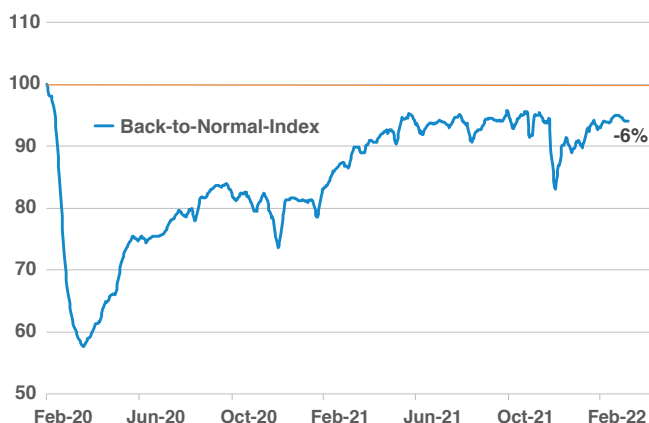
In one of the most uproariously entertaining scenes of “O, Brother,” the simple-minded Delmar believes that his companion, Pete, had been transformed into a toad by the sirens since all that was left of him after the encounter was his clothes with a toad inside his shirt. The financial press, market analysts and even the broader consensus sentiment seem to display a similar take on the economy as of late: that it has turned into an ugly frog in a span of less than three months.

This is too harsh of an indictment for an economy that, last year, turned up its best performance in nearly four decades. Real GDP grew by a stellar 5.7%, buoyed by a nearly 8% growth in consumption spending, the highest in post-war history. Of course, much of this was driven by spending on durable goods, which grew by a staggering 18.1%. But though less reported, spending on services also rose solidly by 5.8%, the highest since the expansion of 1951. Business investments also posted the best year in nearly one decade, rising at a

nearly 10% rate. Production activity has been driving at full throttle: Industrial production has completely recovered from the pandemic-abyss and the Purchasing Manager's Index (PMI) — a measure of manufacturers' confidence — has exceeded its 2021 level only 15% of the time. The labor market added an average of 562,000 jobs per month, registering the highest growth since the heydays of the mid-1990s.

This robust performance is particularly astonishing when considering the economy weathered not one but two full-blown pandemic waves in succession: the Delta wave in the summer and Omicron in the winter. Both had a relatively minor impact on economic activity, mostly in the service sector. Moody's Back-to-Normal Index — a gauge that aggregates three dozen high-frequency indicators — fell only by 4% during the Delta wave and by 10% during Omicron, significantly less than the 60% and 40% declines seen during spring 2020 and winter 2020/2021, respectively (Figure 9). Of course, much of this has to do with the fact that governments across the world (with very few exceptions) have come around to the view that a lighter touch rather than full-scale lockdowns is a more prudent policy in the face of repeated virus flare-ups.

FIGURE 9
Back-to-Normal Index Is Not Quite Fully Back to Normal
(back-to-normal index, Feb 2020=100)



But deeper shifts are at play: Omicron, in particular, seems to have dramatically altered attitudes around the virus, both on the part of the public and policymakers. Given its high transmissibility due to its immune-evasive features, but lower virulence, it brought on a new realization that while the world likely won't permanently stomp out the virus, it may well learn to live with it. Indeed, as Omicron stormed the country, people largely carried on as normal even though infections were more than three times higher than the tidal wave of the previous winter. The largest disruptions were neither due to government diktats nor to individual desire

to shield from the virus but rather to a widespread absence of workers because they were either ill themselves or caring for someone with COVID-19. If anything, COVID-fatigue rather than virus-related anxieties appeared to have dominated the Omicron wave. Taking a cue from public sentiment, policymakers around the globe rushed to relax pandemic restriction measures, from easing travel bans to removing any remaining constraints on economic activity, even before Omicron had run its course.

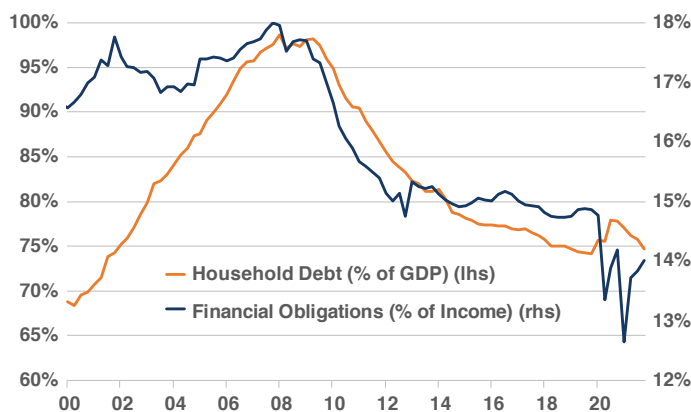
This sea-change in attitude matters greatly for economic outlook, in large part because the fate of the economy has been tightly wound to that of the virus over the past two years. It means that should the next waves of the disease hit, as they undoubtedly will, both public and personal behavior will embrace more sensible virus-related adjustments (perhaps with the sole exception of China), causing far less economic damage than the panic-driven response of the earlier days. More importantly, the disease is slowly approaching an endemic state — one that will likely flare-up with seasonal frequency but without overwhelming the health care system due primarily to existing immunity through prior infections, vaccines and boosters.

Another reason for optimism is the development of effective therapeutics, such as Pfizer's Paxlovid, a breakthrough invention that entirely stops virus replication and is almost variant-proof since it targets the part of the virus that does not mutate. Widespread availability of this drug could effectively counteract slow vaccine uptakes and booster-related fatigue. Indeed, the share of US vaccine uptake has remained stubbornly low despite a massive campaign: Only 66% of Americans are fully vaccinated, and only 30% have received a booster. But even in highly vaccinated countries such as Portugal (90%) and Canada (80%), booster rates lag substantially — 55% and 48%, respectively — underscoring the challenging task of having to jab the entire world every five to six months. Effective therapeutics, such as Paxlovid, may offer a simpler and cleaner way to deal with these issues while successfully combating the virus.

A more benign outlook on the virus front is one reason why the economic expansion should continue this year. But there are also other heartening indicators. First on this list are American consumers, who by and large, are in a robust shape. Americans have yet to draw down the war-chest built during the pandemic, courtesy of both lavish government handouts and forced savings due to the virus. Excess savings are around \$2.5 trillion, of which \$1.2 trillion is due to reduced consumption and \$1.3 trillion to elevated incomes from government support. Consumer balance sheets are also rock solid. Debt as percent of GDP is at a two-decade low; financial obligations as share of disposable

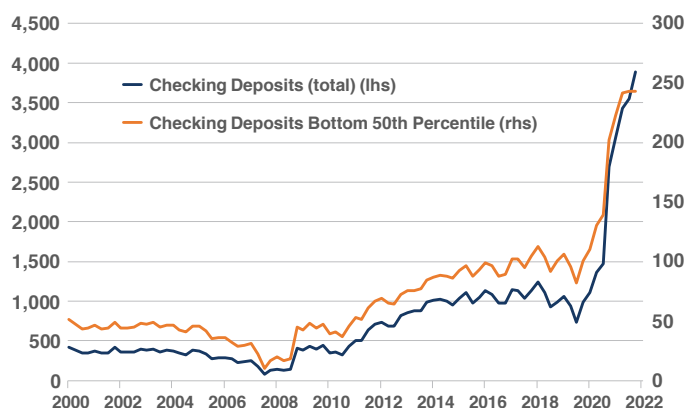
income — at 13.8% — continue to hover at a 40-year low, while consumer delinquencies continue to edge down, even for auto loans, the most stressed segment of the market (Figure 10).

FIGURE 10
Pristine Household Balance Sheets
(HH debt to GDP; financial obligations to disposable income)



As of Q4 2021, household wealth had reached a staggering \$143 trillion — a full 29% above pre-pandemic values, thanks in large part to a stellar performance in the equity market and outsized gains in home prices. Wage gains are also solid given the tight labor market, growing at a 5.8% annual pace, the highest since the early 1980s. Checking deposits are currently running at \$3.8 trillion, almost triple the pre-pandemic average of around \$1 trillion. More encouragingly, deposits for the lower-end of the income distribution — below the 50th percentile — have also risen to nearly \$250 billion from an average of roughly \$100 billion in 2019 (Figure 11). This segment of the population tends to have a much higher

FIGURE 11
Awash in Cash: Bottom 50th Percentile of Consumers Have Some Cushion to Absorb Shocks
(billions of dollars)

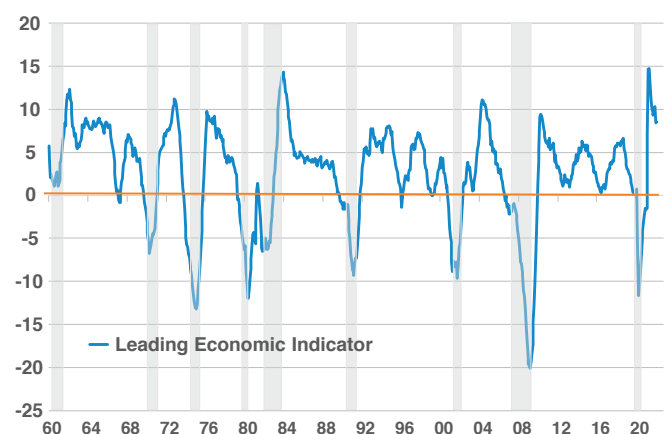


propensity to consume, and though higher inflation will certainly eat up a good chunk of the savings squirreled away, there is enough cash to prop up consumption for at least a year or so.

Moreover, there is still room for the expansion to stretch further. Though the recovery has run much hotter than prior cycles, it has been highly uneven with pockets of the economy still reeling from the pandemic. Moody's Back-to-Normal Index is still 6% below its pre-recession level, largely because of a persistent shortfall in various service-related sectors. As of early April, TSA foot traffic is around 10% below normal levels, and while dining out has almost caught up with pre-pandemic figures at the national level, significant disparities persist as some of the largest cities continue to languish: Seated diners are down 43% in New York City, 42% in San Francisco and 38% below normal levels in D.C. Compared to these figures, Chicago and Los Angeles — down 16% and 12%, respectively — are positively brimming with activity. And though overall consumption spending on services has caught up with pre-pandemic levels, it is still running around 1.6% below trend. Add to that the roughly \$1.3 trillion in cumulative shortfall over the past two years and there's plenty of catch-up on the demand for services, should the virus cooperate.

Other indicators also point to sustained growth. The Conference Board Leading Indicator Index (LEI) and all its subcomponents, with the exception of consumer confidence, are firmly in expansion territory (Figure 12). More importantly, the underlying trends — the rate of change rather than levels — which tend to paint a more accurate picture as to where things are headed, though decelerating, are broadly stable, at least at this point. Slowing trends are not a surprise even absent the formidable headwinds that the U.S. economy is facing for the very simple

FIGURE 12
Leading Economic Indicator, Though Weakening a Bit, Is Still Robust
(LEI, year-over-year percent change; recession bars)



reason that base-year comparisons were bound to deliver unflattering figures relative to last year when a reopening economy sent growth to overdrive. This explains why the year-over-year change in the LEI, though robust at a current 7.2%, is certainly off the boil of 12.3% registered in April 2021.

We could live with slower growth due to simple mathematical quirks. But the problems run much deeper, and unlike the previous three recoveries, this one will be steeped in persistent stagflation dynamics: decelerating growth coupled with uncomfortably high inflation. Strong consumer balance sheets should continue to prop up demand, further stoking inflation. But supply side-issues — continued supply logjams, labor shortages, the Ukraine-Russia war and potential virus flare-ups — are more menacing because they will fuel inflation while simultaneously throttling growth. Rapid rate hikes will deliver additional body blows to the economy.

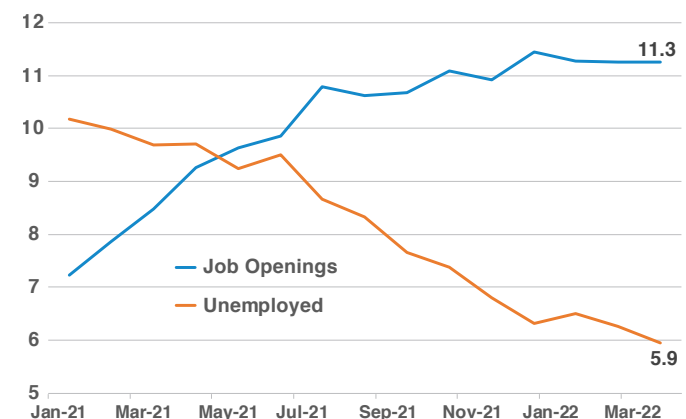
It wasn't supposed to be this way. Earlier this year, the conventional wisdom had settled on the view that while headline growth for this year would be less impressive, under the hood, America's economic engine would hum a healthier tune. We warned repeatedly against this excessively sanguine view in our last report, arguing that sustained dynamics both on the demand and supply side were creating deep structural imbalances, which would continue to deliver stubbornly high inflation for quite a while. That's because the delicately choreographed system of supply chains was never meant to handle such sky-high demand. The persistent gluts of the 2010s have given way to a shortage economy, thanks to these outsized imbalances. Given the severity, a return to normalcy is likely one to two years away.

The world is still short of everything: from cars to construction materials, diapers and baking pans. Perhaps the most pervasive is the shortage of semiconductor chips, especially legacy older-technology chips, which go into the production of autos and other appliances. A dearth of chips constrained U.S. vehicle sales to below 15 million units in 2021 for a second year in a row — 2 million below normal levels — lopping off around \$80 billion revenues from the industry. Things are not getting better: In February, Toyota said it would cut production by 150,000 (or 18%), because of chip shortages. A recent Commerce Department survey found that large manufacturers' chip inventories has fallen to 5 days from 40 days in 2019. Forecasts peg tight chip supplies to persist well into 2023.

The most jarring imbalance is the one between the need for workers and their availability. Labor shortages have plagued this recovery for nearly one year now, and they do not appear to be easing. In July of last year, when the persistence of labor

shortages became painfully acute, there were 10.7 million job openings while the total number of unemployed was 8.7 million. Now, there are 11.2 million job openings and a much smaller pool of unemployed: only 5.9 million (Figure 13). Labor shortages are particularly severe in low-skilled, low-wage areas such as Leisure and Hospitality where the job opening rate is as high as 10%. But the labor force participation rate among workers with lower levels of education — the main supplier of workforce for this sector — is still around 1.5% below pre-pandemic levels. We expect these figures to improve over time as excess savings run out, inflation takes a bite and the labor market normalizes. But this will take a while, and even then, the gap between labor demand and supply will persist: Even if every new labor force entrant from this segment of the population were to be employed in the Leisure and Hospitality sector, it would still be short 300,000 positions.

FIGURE 13
Lasting Labor Shortages:
Job Postings Far Higher than Number of Unemployed
(millions)



There is no question that the labor market is excessively tight: The labor force participation rate is only 0.6% below pre-pandemic levels, while the employment-to-population ratio is only 0.5% below. An excess of 2.5 million workers has retired sooner than expected over the 2020-2021 period, which means that the pool of workers has permanently shrunk more rapidly than what demographics dictate. And pandemic-related disruptions may resurface should future waves crash again. At the height of Omicron, 8.8 million workers — a full 5% of the workforce — was not working due to being sick with the virus or caring for someone with COVID-19. And that was in the face of a relatively mild variant. A sub-variant of Omicron — BA.2 — appears to be even more transmissible and cases are rising again around the world, primarily in Asia and Europe. It's a matter of time before the tide crashes on our shores, and though going forward the pandemic is unlikely to bring the economy to its knees as it once did, even moderate disruptions would create non-negligible strains.

Ramped up demand and a dearth of supply are perhaps the most acute in the housing market. A surge in demand has been met with a persistent low supply of new homes due to shortages of skilled labor, raw materials and developed land. Home prices have soared by 19.2% (year-over-year) according to the Case-Shiller national price index, the highest on record. Home inventories, though improved a bit compared to early this year, continue to remain at historical lows. Mortgage rates have shot up to 5%, the highest since 2011, rising by an eye-popping 200 basis points over the rate that prevailed throughout 2021. This will certainly take the bloom off the red-hot market, cooling off demand. The supply side will also slowly correct as higher prices draw more sellers into the market and homebuilders ramp up construction. We expect the pace of home appreciation to slow down to the lower end of the single digits (between 3.4% and 4%) by the end of the year.

Supply-chain bottlenecks are another issue. The Ukraine-Russia war has poured cold water on the hopes they will resolve soon. But they were likely to persist even if the war never happened. That's because improvements were always likely to occur in incremental steps given historically high levels of disruption. Indeed, as shown by the New York Fed Global Supply Chain Pressure Index, supply snarls eased a bit in late 2021/early 2022, but just by a touch. And improvements were not broad-based: Some indicators got a bit better; others didn't. Retail inventory-to-sale ratio, at 1.17, is currently a hair above rock-bottom values, but light-years below the historical average of 1.6. The ISM survey of manufacturers shows continued improvement in delivery times, but shipments from supplier's warehouses in China to America has risen from under 50 days before the pandemic to a current 114 days, the longest ever. Worker shortages in warehousing and distribution are as dire as they have ever been.

Another reason why gummed up supply chains are unlikely to be resolved soon has to do with ill-devised pandemic policies. China is firmly wedded to its zero-COVID policy, which wreaked havoc on supply chains last summer when Delta hit. But things have gotten immeasurably worse with Omicron: Xi'an suffered a lockdown in early January. The large cities of Shenzhen and Shenyang, accounting for 16% of China's exports, were locked down in mid-March. Shenzhen is also home to Yantian port, one of the world's busiest, which was partially shut down last May, contributing to the painfully long ship lines witnessed last summer. And now, it's Shanghai's turn. Shanghai's port — the world's busiest — handles more than four times the volume of the ports of Los Angeles and Long Beach combined. There are

currently more than 300 ships waiting to berth at Shanghai's port, a nearly five-fold increase compared to two weeks earlier. As expected, freight rates, which were cooling off in the fourth quarter after sky-rocketing in the middle of last year, are creeping back up. Ditto for prices paid by manufacturers in the ISM survey.

None of this spells good news for inflation. Rents, which make up around one-third of the CPI basket, rose 15.2% in January compared to the previous year. But they filter through to inflation statistics with significant lags. They also tend to be stickier. This means that much of the recent rise has yet to be reflected in headline inflation figures. Wage growth is another laggard: Wages are up 6% — the highest rate since the mid-1980s, according to the Atlanta Fed wage tracker (Figure 14). But overall numbers do not do justice to the building wage pressures in some sectors: wages for Leisure and Hospitality are up a jaw-dropping 15% from a year earlier; those in transportation have risen by 11%. A full 26% of businesses plan to raise wages over the next six months and nearly half plan to raise prices, according to the survey from the National Federation of Independent Businesses.

FIGURE 14
Rapid Wage Growth
(wage growth, y-o-y, Atlanta Fed)



While the coming headwinds won't bring about the doom of this expansion, at least not over the near term given still strong fundamentals, it does mean that the journey ahead will have to battle powerful stagflation winds. The expansion will continue, but in the shadow of slower growth and relentlessly higher inflation, there isn't room for much else to go wrong. Here's to hoping nothing else does.

Between Scylla and Charybdis: Stagflation and Recession Risks

“We’re in a tight spot”
- *“O Brother, Where Art Thou?”*

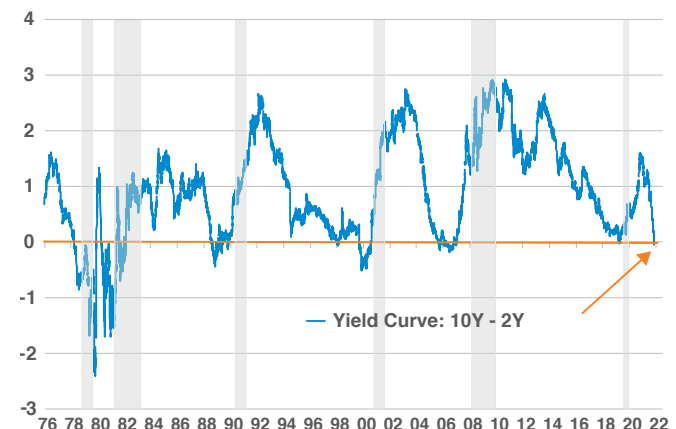
As the three fugitives in “O Brother” grapple with various obstacles in their journey home, Ulysses chides his friend Pete for his gloomy outlook of their predicament, saying “I would like to address your general attitude of hopeless negativism. Consider the lilies of the field or ... take a look at Delmar here as your paradigm of hope.” We could all use a Delmar now as a paradigm of hope. As grim as the outlook may sound, things could be worse, especially in the longer term — beyond the next 12–18 months — and the economy may be mired in the misery of a full-blown stagflation or plunge headlong into another recession.

Our view is that a full-fledged stagflation — persistently high unemployment coupled with stubbornly high inflation — is unlikely to materialize. Some inflationary pressures should subside over the next two years as the pandemic retreats and supply chains gradually normalize. The Fed rate hikes should also do their trick by cooling off demand and easing some inflationary pressures. Nonetheless, inflation will remain higher than the last decade, in part because of powerful structural forces. Tapping the glut of inexpensive labor in China and other parts of the world, which kept prices and wages down for two and a half decades, has largely run its course. In 1990, manufacturing wages in the U.S. were 26 times higher than in China; they are now only four times as high. Inflation may well settle above the Fed’s desired rate of 2% over this decade, likely in the 3% range, even after the current inflationary pressures are stomped out.

The biggest worry is recession. On the face of it, most leading indicators do not ring any alarm bells: Building permits, bank credit, initial claims, ISM surveys, while decelerating from the white-hot pace in 2021 as the economy reopened, are stable. Only two measures appear troubling. The first is consumer confidence, which has slumped to the lowest level since 2011, when the U.S. economy wobbled, a fiscal debt ceiling loomed large and Eurozone seemed to be on the brink of the collapse. The second harbinger of bad news is the yield curve — the difference between the 10-year and two-year yields — which turned negative briefly in early April, though it has reverted back to positive territory (Figure 15). A yield curve is why inversions are always greeted with sheer terror by markets. The general time lag between an inversion and the onset of a recession is between eight and 15 months.

To be fair, there have been false signals in the past: In 1966, when a slowdown, but not a recession, followed an inversion; in 1998, on the heels of the LTCM collapse; and in 2019, when the ensuing pandemic (and not the usual business cycle dynamics) plunged the world into a deep recession.

FIGURE 15
Error Strikes: The Yield Curve Briefly Inverted
(10Y-2Y differential, percent; recession bars)



But recessions are not conjured out of thin air: There are reasons that bring about the ultimate demise of an expansion. Historically, they have come to an end either because of significant vulnerabilities in the private sector (high levels of debt) or due to some type of shock. Going back to the 1950s, there are generally four main catalysts that have preceded the 10 previous recessions: fiscal tightening; external shocks (oil prices; pandemic); overheating, which led to an overtightening by the Fed; or financial imbalances (Table 1). With the possible exception of the last factor, though even here a case could be made for market froth, all other factors are at play.

TABLE 1
Main Recession Factors

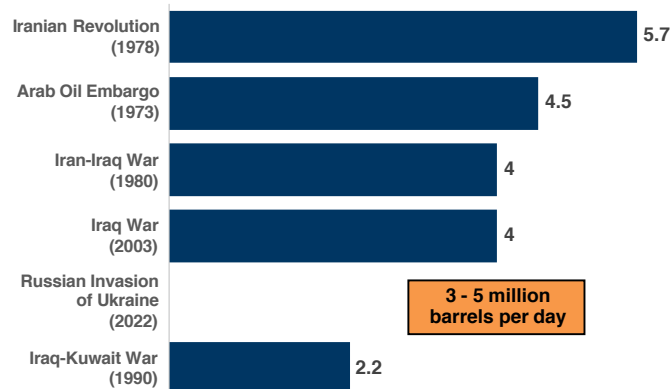
	Fiscal	External Shocks (Oil/Pandemic)	Overheating/ Overtightening	Financial Imbalances
1953				
1957				
1960				
1969				
1973				
1980				
1981				
1990				
2001				
2007				
2020				

Start with fiscal contraction. Fiscal tightening on a massive scale has generally been a feature of significant post-war demobilization efforts such as after World War II (which preceded the recession in 1945) or the Korean War (1953). But the pandemic was treated no different than a conventional war. Governments across the world adopted a war-like approach against the virus: In the U.S., the budget deficit was an astounding \$3.1 trillion in 2020 and an additional \$3 trillion in 2021. The deficit is set to shrink down to \$1 trillion dollar this year, a massive scale-back that, though necessary, will undoubtedly weigh on growth. Such unwinding of fiscal support would normally deliver a deadly blow to the economy were it not for the plush cushions of state and local government budgets, which are awash in pandemic-cash — \$650 billion, to be precise — more than they know what to do with. The states are determined to spend that largesse, some on reasonable investments and rainy-day funds, others on unsustainable social programs and tax cuts. Either way, the states' coffers should soften the sting of the unwinding of federal money over the next 12–18 months. But when the tide goes out and coffers are empty, this massive fiscal contraction is bound to take some oomph from the economy.

External shocks — the second reason why expansions succumb — were a feature of the 1970s as an OPEC embargo and later the Iranian revolution sent oil prices soaring, delivering powerful supply-side shocks to the U.S. and global economies. You would have to work hard to miss the similarities between then and now. In fact, an argument can be made that we are now suffering not one, but two supply-side shocks: the pandemic, which scrambled supply chains, and the war in Ukraine, which has thrown the energy and commodity markets in disarray.

Worse case scenarios could materialize. Should Russia's energy exports be taken off the market — due to sanctions, self-sanctions or reduced capacity — the world supply of oil is likely to suffer a shortfall of between 3.5 million and 5.2 million barrels per day, a yawning gap unlikely to be bridged in the short term. For reference, the Iran Revolution of 1978 removed 5.7 million bpd from world production; the Arab Oil embargo of 1973 left a shortfall of 4.5 million bpd, while the Iran-Iraq War (1980) and the Persian Gulf War (1990/1991) lopped off around 4 million bpd from global oil production (Figure 16). In all those instances oil prices sky-rocketed anywhere from 110%-145%. More worryingly, it's not just oil but other food and commodities. Russia and Ukraine export virtually everything, and unlike the 1970s, it's not just the price of oil but the price of everything that is surging.

FIGURE 16
Geopolitical Disruptions to Oil Supply
(millions of barrels per day)



The most concerning are Fed actions. With lightning speed, the Fed has turned from a perennial dove to a fierce inflation hawk, adopting a war-like stance with a Bible-thumping zeal. This spiritual awakening has accelerated the drumbeat for faster tightening: There is now chatter from Fed officials that rates may increase by as much as 50 basis points in some upcoming meetings. It is becoming painfully obvious that the Fed is ready to do “whatever it takes” to bring inflation closer to its target, even if it means throttling growth. Indeed, between the horrors of persistent stagflation and the pain of a quick but short-lived recession, the Fed, while preferring neither, would settle for the latter. Faced with unpalatable choices, it is also in full panic mode.

The problem with panicky central bankers is that they tend to miscalculate either the speed, the depth or the impact of their actions. Even absent any mistakes, rate hikes almost never perfectly stick the landing: cool off growth enough to rein in inflation but not so much as to choke off the expansion. Of the 13 rate hike cycles during the postwar era, 10 preceded a recession with an average lag of around 26 months. The only exceptions were the rate hike cycles of 1963, 1994 and the most recent one, which began in 2015. The latter is a tough call: The recession was undoubtedly caused by the pandemic, which means we were robbed of the opportunity to assess whether a recession would have occurred following rate hikes absent COVID-19.

More worryingly, conditions are significantly more dire now than in other hiking cycles. With the exception of the early 1980s, the Fed has always tightened to preemptively reduce inflationary pressures from getting out of hand, not to reduce an already alarmingly high inflation. Indeed, the average inflation right before a tightening cycle has been around 3.8%, more than half the current rate. The exception of 1980, when inflation was 13.5%, is hardly comforting considering that the economy plunged into a deep recession as the Fed was attempting to tame inflation.

The pace of tightening matters too. The last hiking cycle lasted four years — from 2015 to 2019 — over which interest rates rose by a total of 225 basis points. Now, the tightening is much faster: According to the Fed dot plot, the federal funds rate will end the year 175 basis points above where it started. And this projection appears to be a bit on the downside: After more militant comments from the Fed over the past few days, the market expects a hike of 225 basis points by the end of this year, the equivalent of a four-year period in the previous cycle. An additional 50 basis point rise is expected early next year. All this while the Fed simultaneously attempts to rapidly shrink its bloated balance sheet, adding another layer of contractionary shock to an economy that is set to disappoint.

Of course, rapid rate hikes are needed to bring inflation to heel. But if the past two years have taught us anything, it is that rapid moves to a new equilibrium rarely portend good omens. In a world where potential GDP growth is around 2%, rapid adjustments may be the catalyst that sinks this expansion.

It did not have to be this way. We warned repeatedly in these pages last year that the Fed was squandering too many opportunities to tamp down inflation when there was a solid case to do so with far less painful tradeoffs. Instead, it chose to continue with its crisis-mode operation, purchasing \$120 billion of Treasury and mortgage-backed securities, which in the face of an overheating economy seemed downright bizarre. Now, it is left with fewer choices and worse options, having to tighten faster and more aggressively than it ever wished.

In “O Brother,” after their river baptism, Delmar and Pete are convinced that they are absolved of all sins, with Delmar insisting that “they were witnesses that seen us redeemed.” To which, the cynical Everett replies: “Even if that did put you square with the Lord, the state of Mississippi is a little more hard-nosed.” We are heartened that the Fed has experienced an almost religious awakening and has focused on inflation as the most pressing concern, but we fear that economic reality is a bit more hard-nosed and may not bent that easy to its will. Having said that, we are eternally hopeful that things may turn out for the best. After all, the state of Mississippi pardoned the Soggy Bottom Boys’ “rough and rowdy past” and their “rambunctiousness and misdemeanoring.” Let’s hope fate has in store the same auspicious path for the economy.

ORANGE COUNTY, SOUTHERN CALIFORNIA AND CALIFORNIA

COVID Epilogue – Part II?

Two years after the sharp jolt of COVID-related shutdowns, the local economy has yet to fully recover. In our October 2021 forecast, we expressed our hope that the pandemic would finally lose its dreadful grip and that by early 2022, it would become more endemic — like the flu — treatable and relatively mild in its consequences. We cautioned against the possibility of another variant, but our hope was that it would not happen. Well, it did. The Omicron variant hit us severely at the end of 2021 and into the early months of 2022. Starting in December 2021, infection rates shot up nationally and locally along with increases in hospitalizations and deaths (Figures 17a and b).

FIGURE 17a
In the Shadow of the Pandemic: COVID-19 Infections in SoCal
(7-day moving average, per 10,000 population)

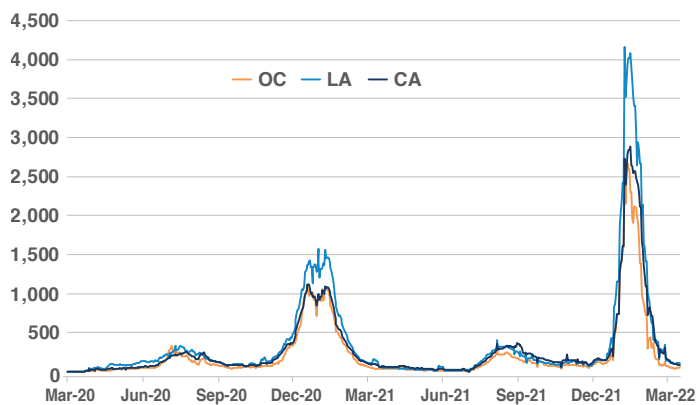
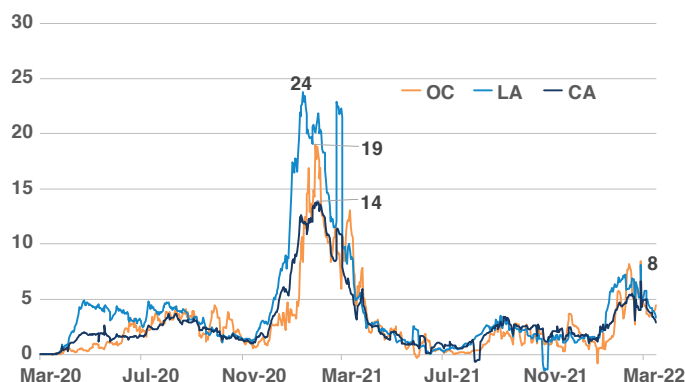


FIGURE 17b
In the Shadow of the Pandemic: COVID-19 Deaths in SoCal
(7-day moving average, per 10,000 population)



To be sure, while the Omicron variant is more infectious than its predecessor Delta, it is unquestionably less severe both in terms of hospitalizations and fatalities. As such, it had considerably less impact on economic activity than other waves. Large-scale events (such as concerts and other activities) were canceled, but primarily due to worker shortages. The pattern of infections, hospitalizations and deaths in the Omicron surge was similar to previous episodes: Orange County fared better than its Southern California peers. Adjusting for population, the 7-day moving average of daily infections from Omicron in California as a whole reached a peak of 2,886 per million people in January 2022, more than double the 1,120 infections recorded for the wild-type in December 2020 (Figures 18a and 18b). Deaths, however, were far less, peaking at eight per million per day, compared to 24 per million during the previous winter. Likewise, infections for Los Angeles County almost tripled at 4,163 for Omicron relative to December 2020 (1,560). Orange County cases peaked at a daily

FIGURE 18a
The Omicron Wave: OC, LA and CA Infections
(7-day moving average, per 10,000 population)

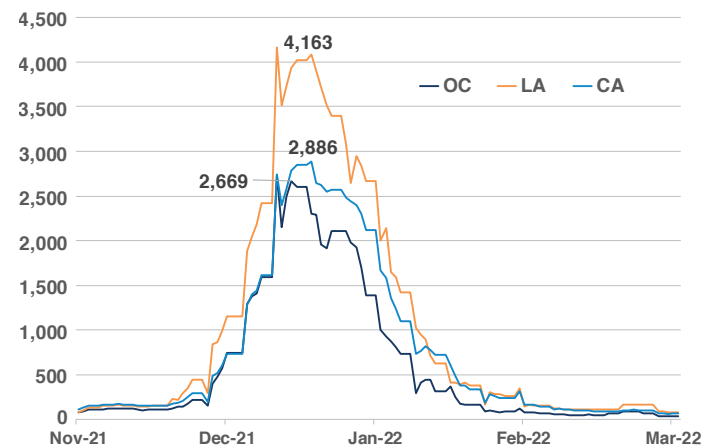
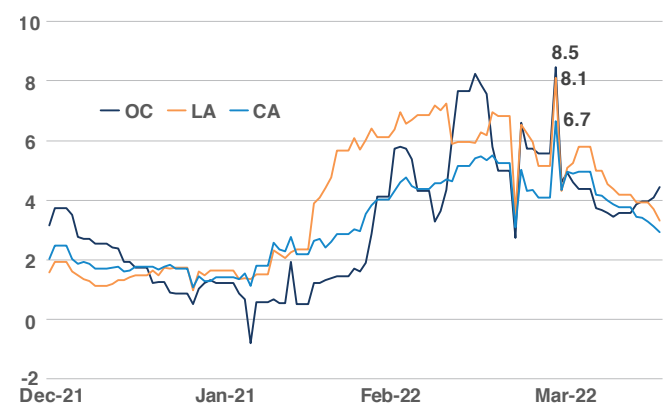


FIGURE 18b
The Omicron Wave: OC, LA and CA Deaths
(7-day moving average, per 10,000 population)



rate of 2,669 during Omicron compared to 1,075 a year earlier. Despite the jump in cases, fatalities were less than half those recorded in December 2020. The figures representing local deaths may seem a bit strange given their zigzag shapes but this is due to the lumpy nature of local data, especially for smaller counties, despite improvements made in statewide reporting.

As of this writing in early April, another variant, BA.2, is lurking and has already infected large segments of the populations in Europe. It is now spreading on the East Coast — New York and D.C., in particular — and as has been the pattern for the virus, it will only be a matter of time before it makes its way to Southern California. It does appear that the new variant may be even more infectious than Omicron, but less lethal in its severity.

There are at least two ways in which repeated flare-ups of the virus affect society. First, they force businesses and households to restrict their full activity levels resulting in below normal engagements of in-person work, eating out and recreational activities. This issue has become less problematic with each successive wave of the virus, but as long as the virus continues to linger, individual readjustments will persist. It thus has a direct impact on economic activity and employment. Second, they may lead to large-scale quarantining of the workforce, as in the case of Omicron, thus exacerbating labor shortages. Third, through restrictive regulations, they have a lasting impact on social interactions, psychological development and learning potential, especially for children. Several reports have documented substantial damage to the education of children in the last two years. The continued persistence of the disease will further delay the recovery of lost knowledge and skill acquisition, especially for young children.

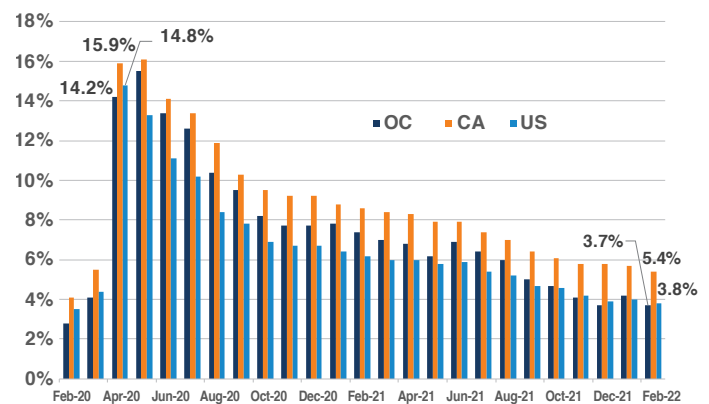
More importantly, the pandemic, in addition to inflation woes and the Russia-Ukraine war, has created a triad of problems that are serving severe blows to the economy, both nationally as discussed earlier in this report, and locally.

Employment and Demographics

Many sectors of the economy, both at the national and regional level, have recovered quickly from the pandemic-induced abyss of spring 2020, and, according to some measures, are at pre-pandemic levels. For example, unemployment rates have fallen precipitously throughout the country, with the national rate dropping from 14.7% in April 2020 to 3.6% in March 2022. For California, the unemployment rate has come down from 16.1%

in May 2020 to 5.4% in February 2022 (latest available data as of this writing). In Orange County, the rate has declined from 15.5% in May 2020 to 3.7% in February 2022, in Los Angeles County from 19.2% to 5.4% and in the Inland Empire from 15.6% to 5.4%. (Figure 19).

FIGURE 19
Unemployment Rates Have Fallen Across the Board
(unemployment rate, percent)



Indeed, current unemployment rates are only a shade higher than before the pandemic. But focusing strictly on unemployment rates may offer a distorted picture since they are constructed from two separate variables: the labor force and the number of people employed. While the latter has been going up, the labor force has not recovered to its pre-pandemic level. Hence, even though the unemployment rate has fallen, the number of people employed is well below pre-pandemic. In fact, employment numbers are lower across the board: by 676,000 for the entire state, by 56,000 for Orange County, 229,000 for Los Angeles County and 33,000 for the Inland Empire. The labor force in February 2022 for California was 455,000 (2.4%) smaller compared to February 2020. The comparable figures were 53,000 (2.7%) for Orange County, 184,000 (3.5%) for Los Angeles County and 59,000 (2.8%) for the Inland Empire. As discussed in our national narrative, a large number of people have permanently left the labor force, and many others are temporarily sitting on the sidelines.

Another measure of employment conditions, payroll employment, paints a similar picture. Orange County, after losing 143,000 jobs or 8.5% of its total payroll employment in 2020, gained 47,600, or 3.1% in 2021 on an annualized basis. Not all the sectors, however, shared equally in this recovery. The construction sector lost 4,800 jobs in 2020, but the recovery in 2021 was rather paltry, with only 175 new jobs. Manufacturing lost jobs both in 2020 and 2021, 6.7% and 1.4% respectively, as did the government sector, 4% and 0.5%. On the other hand, the Leisure and Hospitality sector lost 66,000 (29%) jobs in 2020 but regained 17,300 (10.7%) in 2021. Similarly, Trade Transportation, and Utilities lost 17,200 (6.6%) and regained 7,500 (3.1%), Professional and Business Services lost 18,500 (5.6%) and recovered 12,100 (3.9%), and Education and Health lost 7,300 (3.1%) but got back 10,650 (4.7%). In other words, while there have been important employment gains in 2021, payroll employment is still below pre-pandemic in most industries.

A different way to review the employment situation is to study the *monthly* data in addition to the changes in average *annual* employment discussed above. For the state of California, at a current 17.39 million, employment rolls are still 353,000 below those in February 2020. The comparable numbers for Orange County are 1.621 million in February 2022 (latest available data) and 1.685 million in February 2020 — a full 64,000 jobs below pre-pandemic levels.

The Leisure and Hospitality sector was hit the worst, losing over 112,000 jobs in a matter of 4 months from February 2020 to May 2020. It has recovered remarkably well but its current employment of 208,100 (as of February 2022) is still 17,000 jobs below February 2020 figures. Subsectors of Leisure and Hospitality — such as Accommodations; Arts, Entertainment and Recreation and Amusement, Gambling and Recreation — are also under severe strain, being 10,600, 7,100 and 6,200, respectively, below their pre-pandemic levels (Figure 20a). Other sectors with large gaps are Manufacturing; Trade, Transportation and Utilities; Professional and Business Services; and Financial Services. In percentage terms, Accommodations is the most affected sector with 23.1% fewer jobs compared to February 2020, followed by Trade, Transportation and Utilities; Clothing and Accessories; and others as listed in the accompanying chart

(Figure 20b). It is worth emphasizing that the February 2022 data does not fully capture the negative impacts from rising inflation, recent interest rate increases and the Russia-Ukraine war.

FIGURE 20a
OC Industries with the Largest Absolute Employment Gaps
(change, Feb '20 – Feb '22)

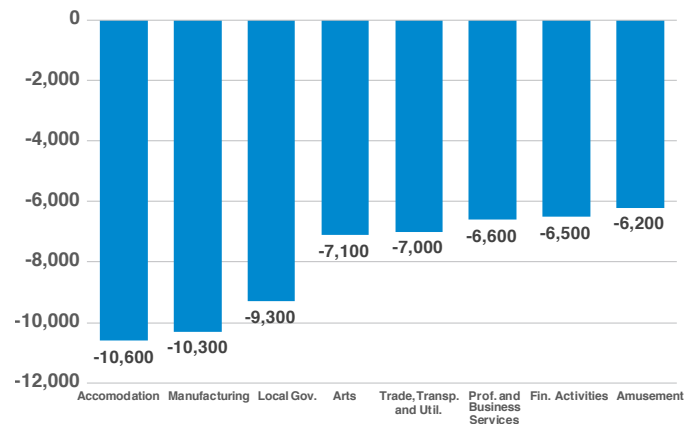
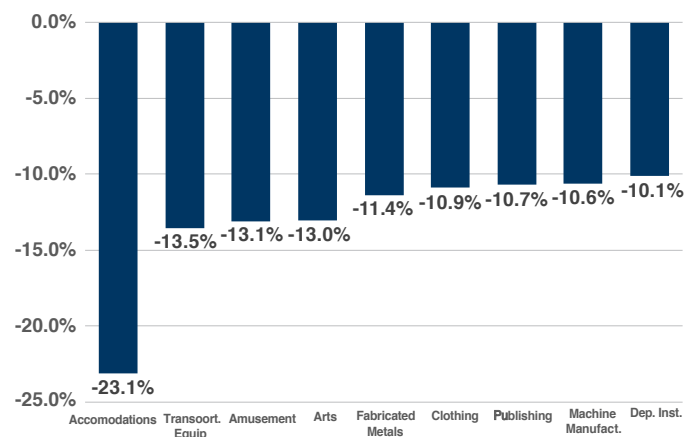


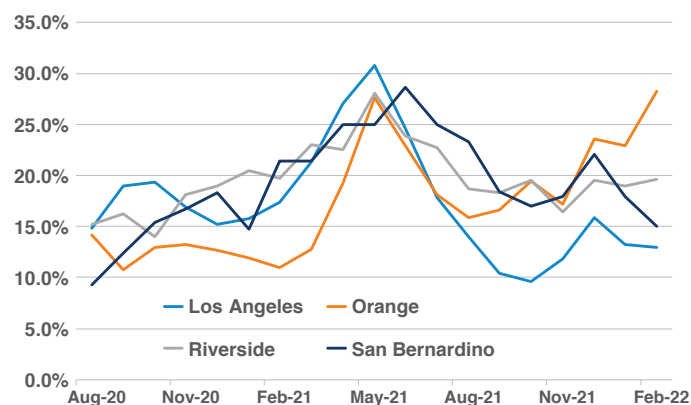
FIGURE 20b
OC Industries with the Largest % Employment Gaps
(percent change, Feb '20 – Feb '22)



Housing

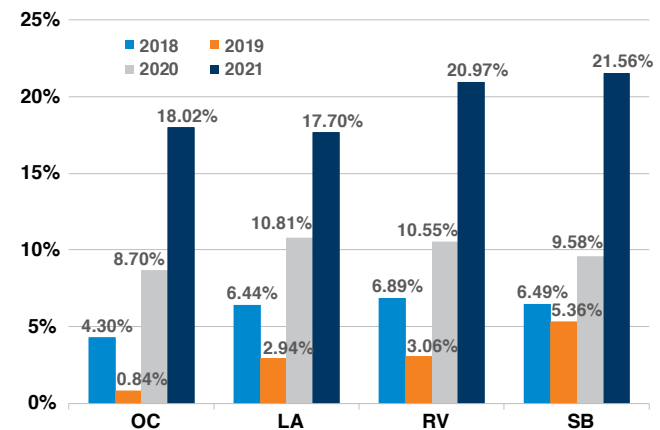
The torrid pace of housing price appreciation that was set after the pandemic continued unabated through 2021. Since August 2020, the median price of a single-family home in each of four Southern California counties (Orange, Los Angeles, Riverside and San Bernardino) has risen by double digits every month relative to the previous year (Figure 21). This 17-month stretch of explosive growth exceeds the previous two similar periods of monthly double-digit gains during 2004–2005 and 2012–14. As discussed in the national narrative, both supply and demand factors have played a significant role in putting pressure on housing prices.

FIGURE 21
Home Price Appreciation in Double Digits
for 18 Months in All SoCal Counties
(percent change from previous year)



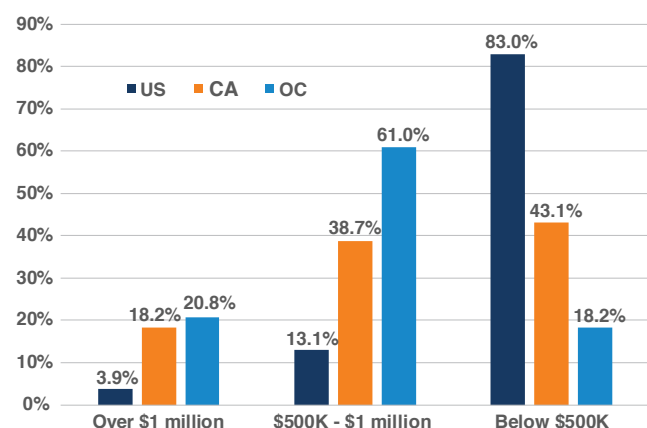
In Orange County, the median price of a single-family home reached \$1,167,000 in February 2022, compared to \$885,000 in August 2020. The comparable figures were \$870,000 versus \$750,000 for Los Angeles County, \$580,000 versus \$455,000 for Riverside County, and \$460,000 versus \$365,000 for San Bernardino County. The cumulative price appreciation over 18 months from August 2020 to February 2022 was 31.9% for Orange County, 16% for Los Angeles County, 27.5% for Riverside County and 21.6% for San Bernardino County. The rate of appreciation, in fact, accelerated in 2021, reaching 17.7% for Orange County compared to 10.8% in 2020. Similar increases occurred in Los Angeles County (18% in 2021 compared to 8.7% in 2020), Riverside County (21% in 2021 and 10.6% in 2020) and San Bernardino County (21.6% in 2021 and 9.6% in 2020). Importantly, while the rate of appreciation has cooled off in most counties, as seen in Figure 21, for Orange County, it picked up again at the end of 2021 and early 2022.

FIGURE 22
Home Prices: A Cross-County Perspective
(annualized percent change)



As a result of sharp price increases during 2021, housing became more expensive at all price ranges. Sales data by price reveals this pattern over time (Figure 23). In Orange County, the share of single-family homes costing more than \$1 million jumped to 50.2% in 2021 from 35% the year before, while the share of homes below \$300,000 fell to 0.7% compared to 0.8% in 2020. This implies that significantly fewer homes were sold in the price range of \$300,000–\$1 million. For Los Angeles County, these shares were 37.1% for \$1 million or more and 2.2% for those under \$300,000. The Inland Empire has a much larger share of homes in the \$300,000–\$1 million range, but even there, the share of high-end homes grew and the low-end declined. In Riverside County, the share of homes costing \$1 million or more sold in 2021 was 7.2% and those under \$300,000 was 8%, while in San Bernardino County, these shares were 3.4% and 18%, respectively.

FIGURE 23
Share of Homes over \$1 Million Keeps Rising in OC
(value of owner-occupied housing)



These phenomenal price increases have, of course, benefited current homeowners but have been disastrous for new and potential homebuyers. Even though incomes have gone up, housing affordability is at an all-time low. Now, as interest rates begin to rise, rising mortgage payments will separate more people from their dream of home ownership.

In addition to the demand side factors — such as low mortgage rates, pent-up demand from the pandemic and higher income levels — housing supply has also been quite restricted in the last few years. Zoning restrictions, higher cost of building materials and shortage of labor have all contributed to a dearth of new housing. For example, 5,900 housing permits were issued in Orange County in 2020 and 7,500 in 2021, well below the 20-year average of 8,400. In the Inland Empire, where construction has been the most robust in the last several years, 15,500 permits were issued in 2020 and 17,600 in 2021, again well below the average of 29,600. For the Southern California region as a whole, 41,200 permits were issued in 2020 and 48,000 in 2021, about a third below its long-term average. Along with a shortage of new homes, there has been a shrinkage in the supply of existing homes as well. Due to the pandemic, low mortgage rates on existing homes and a shortage of available homes, current owners are less enthusiastic about trading up. As mortgage rates continue to increase, nearing 5%, home prices will cool off. We expect a rate of appreciation of around 3%–4% this year, far below the torrid pace of the past two years.

Homelessness continues to be a significant socioeconomic issue of concern at all levels. California has the dubious distinction of having the largest homeless population in the nation. There are roughly 500,000 homeless individuals nationally, of which 160,000, or 22%, are in California, a much larger proportion relative to its population share (11.9%). According to 2019 data, while the Santa Cruz area has the largest concentration of homeless in the state, in Southern California, Los Angeles County has the greatest number (59,000), and Orange County has 6,860. Biannual counting of the homeless, required by the Department of Housing and Urban Development, was postponed in 2021 because of the pandemic. The process has resumed this year, starting in January in Los Angeles County and the last week of February in Orange County. Results of the count will not be known until late summer or fall of this year.

A flurry of bills was passed last year in an effort to increase housing supply for the homeless, but these will take time to implement, and even then, their effectiveness won't be known for a while. In the meantime, all localities have made some efforts to create temporary and permanent housing for the homeless. The City of Los Angeles recently came to an agreement in a lawsuit to add additional units for the homeless. The County of Los Angeles, however, was not party to the settlement and will need to come up with a different plan. Orange County has added 1,500 beds in six cities, mostly in north and central county, in addition to clearing sidewalks and the homeless encampments along the Santa Ana River close to Interstate 5. Many of the city centers offer counseling and job placement, among other services, to help the homeless find permanent housing. An additional 400 housing units have been created for permanent placement including 125 for veterans.

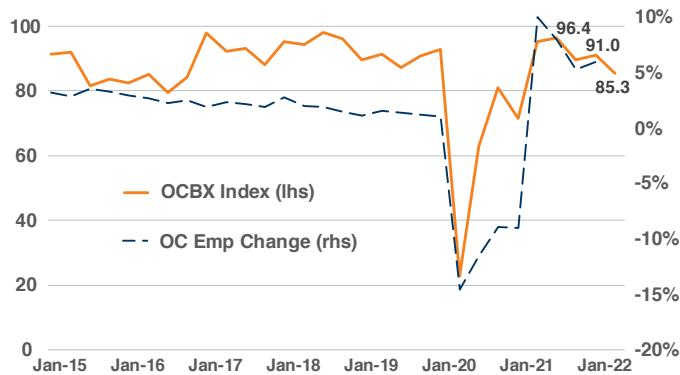
The State of California committed \$12 billion in 2021 and added another \$2 billion this year towards reducing homelessness. By creating a statewide Homeless Data Integration System (HDIS), it now has a consistent way of collecting and monitoring progress of this initiative throughout the state. This is a good start, yet much more needs to be done on a sustainable basis to substantially reduce homelessness.

Orange County Business Sentiment

For more than two decades, the Woods Center has conducted the Orange County business expectations survey — a handy tool that provides supplemental information for our analysis and forecasts in addition to government sources. This survey of several hundred business executives provides us with timely and diverse points of views and is a rich source for gauging Orange County business leaders' short-term expectations about the local and national economies. Combining answers to several questions, we construct an overall index, OCBX, which ranges from 0 to 100. A value above 50 indicates expectations of

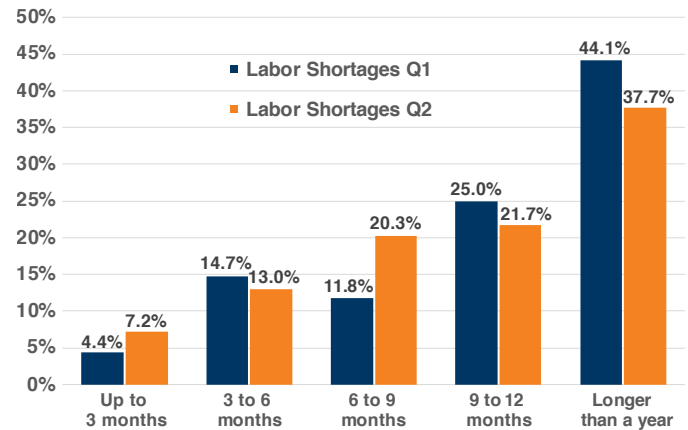
continued growth for the local economy. As Figure 24 shows, the index has a good track record of predicting employment changes and is a useful tool for forecasting. Our latest survey was conducted at the end of March 2022.

FIGURE 24
OCBX Index: A Bit Less Exuberant in the Last Few Quarters
(index)



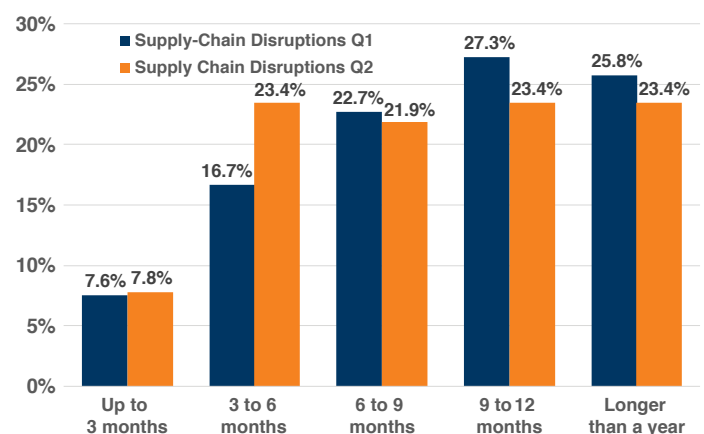
Orange County business leaders rated inflation as their most important concern, mirroring the sentiment nationally. For a second consecutive quarter, we asked Orange County business executives for their expectations of future inflation. Along with current inflation, expectations of future inflation play an important role in determining the future path of inflation itself. We found a major shift in our survey compared to the previous one as 53.3% of business executives expect inflation to exceed 6% by the end of 2022, while only 17.9% thought the same last quarter (Figure 25). A bit more than a third — 37% of executives — expect inflation to remain between 4% and 6% this quarter, compared to 43.6% last quarter, but the share that expect it to be below 4% fell sharply from 38.5% to 9.3% last quarter. Given this dramatic change in the last three months, if these inflation expectations become entrenched and long-lasting, there is danger of these filtering into actual inflation. As we laid out in the national report, our view is that high rates of inflation will persist longer than the current consensus assumes.

FIGURE 25
A Dour View: Labor Shortages Are Expected to Persist for Quite a While
(OCBX survey: percent of respondents)



Labor and supply shortages have contributed significantly to the current alarmingly high inflation rates, so we asked Orange County leaders how long, based on their experiences, they expect these issues to persist. Compared to the last quarter, some improvements are expected. A bit more than one-third (37.7%) anticipate labor shortages to last more than a year, but that is lower than 44.1% from the last quarter (Figure 26). On the other end, while there is little change in those expecting labor shortages to ease within the next six months (20.2% versus 19.3% last quarter), a much larger number, 42% (compared to 14.3% last quarter) expect labor shortages to last between six months to a year. Two-thirds of business leaders now expect labor shortages to ease in less than a year. Expectations were

FIGURE 26
Supply Chain Disruptions Expected to Resolve Within the the Year
(OCBX survey: percent of respondents)



also improved regarding supply-chain issues: For example, 41.2% of business executives expect shortages to ease within six months compared to 24.3% last quarter. Nonetheless, the share of responders that anticipate supply shortages to last over one year has barely budged from 25.8% in the first quarter to 23.4% in the second.

Forecasts

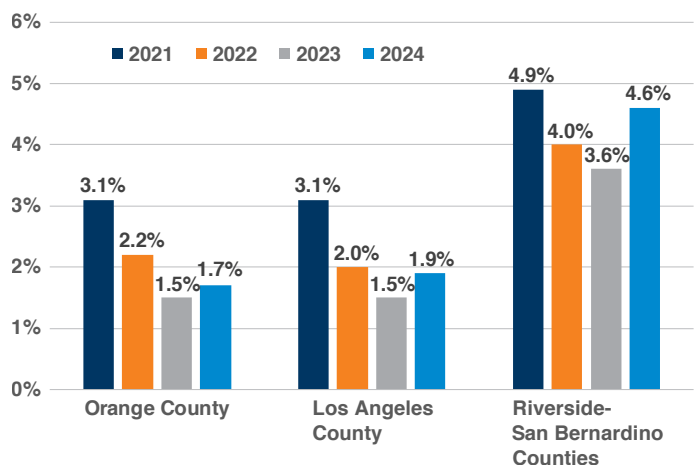
While there are clouds gathering on the economic horizon, California is awash with money. In addition to receiving \$150 billion from the federal government from the March 2021 federal stimulus package, the state expects to receive a sizeable bonanza this year from enhanced tax receipts. The surplus, in fact, may be so large that the state may have to give tax rebates to its citizens to comply with the state constitutional restrictions on how much it can spend from one year to the next. Under the State Appropriations Limit (SAL), popularly known as the Gann Limit (passed in 1979 and modified in 1990) the state cannot exceed a stipulated spending limit estimated over a two-year period adjusted for economic and population growth.

In the last update on March 28, the Legislative Analyst's Office (LAO) projected that the collections from the "big three" taxes — personal income, sales and corporation taxes — will exceed the governor's budget assumptions of \$185 billion for 2021–2022 by several billion dollars with a 90% probability. Their estimate of the excess is between \$4 billion and \$20 billion, with a best guess of \$12 billion. The May budget revision will further tighten these estimates, but the governor has already indicated that the 2022–2023 budget, which must pass by the end of June, will include some kind of tax rebate. While the state and localities certainly needed the help to cope with pandemic-related disruptions, it will be some time before we know how prudently all that money has been spent.

In spite of the trio of troubles — the pandemic, inflation and the Russia-Ukraine war — fundamentals of the economy continue to be strong. There are few signs of imbalance in any of the major sectors of the economy; labor markets remain strong, and personal incomes continue to improve. Consumer confidence has suffered, but so far, there is little sign of households pulling

back on spending. Growth will slow, but will continue for the duration of 2022 and we expect the state and Southern California region to gain employment. We expect the average unemployment rate for California to decline to 5% in 2022 compared to 7.3% in 2021. The rate for Orange County is expected to fall to 3.9% versus 6%, for Los Angeles County 5.6% to 8.9%, and for the Inland Empire to 4.7% from 7.4% for 2022 versus 2021, respectively.

FIGURE 27
Payroll Employment Forecasts
Annual Percentage Change



However, in the face of rising inflation and the Fed's aggressive tightening, we expect general economic conditions to become less conducive to growth in late 2022 and 2023. Slow growth and lower employment gains locally (and likely downright job losses nationally) will be the price paid to bring inflation under control. We expect payroll employment growth to decline to 1.5% in 2023 from 2.2% in 2022 for Orange County, to 1.5% from 2% for Los Angeles County, and to 3.6% from 4% for the Inland Empire. As mentioned earlier, higher mortgage rates will dampen the housing market with the price of a median single-family home increasing by 3%–4% in 2022 and by even a smaller amount in 2023, after a blistering spell of remarkable appreciation over the previous two years.